

Washington State On-Site Wastewater Technical Review Committee

Minutes for the August 14-15, 2002 Meeting

Approved on October 9, 2002 by Vote of the Committee



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Note: The minutes periodically refer to “Items.” Items are documents containing information on a subject being discussed. Items, with their descriptions/titles, are noted at the end of the minutes in the section entitled “List of Meeting Materials.

MEETING ATTENDEES

Members Present

1. Kevin Barry, Eastside Env. Hlth
2. Pam Denton, LHJ Field Staff
3. Scott Jones, Engineers
4. Melanie Kimsey, Dept of Ecology
5. Eric Knopf, Designers, Installers, O&M
6. Bill Peacock, Public Sewer Utilities
7. Tom Rogers, Certified Proprietary Devices
8. Mike Vinatieri, Westside Env. Hlth

DOH Staff

1. Laura Benefield, Wastewater Mgt. Program (Day 1)
2. John Eliasson, Wastewater Mgt. Program
3. Selden Hall, Wastewater Mgt. Program
4. Mark Soltman, Wastewater Mgt. Program (Day 2)
5. Dave Lenning, TRC Coordinator

Guests Who Signed In or Presented

1. Gifford Brown, Infiltrator Systems Inc. (Day 1)
2. Blake Johnston, Infiltrator Systems Inc. (Day 1)
3. Stephen C. Wecker, OCS (Day 2)
4. Keith Grellner, Bremerton-Kitsap Health (Day 2)

INTRODUCTION

Tom Rogers, Chair, called the meeting to order at approximately 10:20 a.m. on August 14, 2002 and at 8:05 am on August 15, 2002 in the meeting room of the BEST Inn in Ellensburg. The meeting on Day 1 began with brief introductions by each committee member, DOH staff, and the interested parties in the audience.

MINUTES

June 5-6, 2002 Meeting Minutes Adoption – By unanimous vote, the committee approved the June 5-6, 2002 TRC meeting minutes without one amendment: On page 8 of 11, the discussion concerning the proposed Glendon RS&G, item 8.f. should read: “Eric Knopf questioned whether O&M needed to be provided routinely twice/year. He suggested twice for the first year and annually thereafter. The rest of the committee agreed. Selden Hall will see that is considered for inclusion into the RS&G.”

ADMINISTRATIVE MATTERS

- Dave Lenning summarized the report made to the Rule Development Committee (RDC) at its meeting on July 17th. A hard copy of the report made to the RDC had been mailed to TRC members. See **Item 1**.
- Dave Lenning briefly explained two other documents (see **Item 1**) the TRC members had received – 1) a list of all the RDC comments initially assigned to the TRC and how they are being dealt with, and 2) a revised copy of the TRC priority list with added RDC comments and committee questions.

SUMMARY OF TECHNICAL DISCUSSIONS

1. Technical Issue #7B –Residential flow rates

Laura discussed the RDC requests for further information that had been mailed out to committee members. See **Item 2**.

- Question #1: Is the 120 gal/bedroom/day an average, a peak, an average peak or what?
 - Scott – We can’t specify a number that will prevent all failures
 - Eric – He sees higher rate of failures on minimum flow or smaller homes
 - Tom – Suggested 120 gallons/bedroom is an average daily flow; argument also applies to quality (average waste strength)
 - Selden – The committee can increase the value for a minimum daily design flow; maybe a disclaimer can be added that specifies what daily design flow is
 - Bill – Daily design flow that has an occasional peak built into it
 - John – The daily design flow recommendation has a safety factor built into it.
 - Bill - 120 gallons/bedroom/day is a daily design flow that contains a safety factor. As the actual flow approaches the daily design flow, concerns for failure due to hydraulic overloading increase.
 - **Committee response:**
 - *120 gallons/bedroom/day is a daily design flow that contains a safety factor.*

- *A definition for daily design flow be added to the regulations. The definition should include the concept that as actual flow approaches daily design flow, concerns for failure due to hydraulic loading increases.*
- Question #2: What peaking is taken into account for residential flows?
 - **Committee response:** **This was answered by answering the first question.**
- Question #3: For non-residential flows, what peaking factor is recommended?
 - **Committee response:** *Non-residential flow peaking factors must be handled on a case-by-case basis.*
- Question #4: Take another look at the issue of residence size and design flows.
 - **Committee response**
 - *The designer shall consider the potential for excessive flows such as from plumbing fixtures, square footage of a residence, and usage, regardless of the number of bedrooms.*
 - *This should be placed in rule.*

2. Technical Issue #6 – Type 1 Soil Issues

- John Eliasson summarized his report (See **Item 3**) by giving a PowerPoint presentation highlighting key factors
- Defined different soil classification systems, particle sizes, fine earth, coarse fragments.
- Discussed the current definitions of Type 1A and 1B soils.
- Described the concerns with Type 1A soils
- Questions followed by committee responses:
 - Is there a need to make adjustments to the existing description?
 - **Committee response:** **Yes**
 - If yes, what changes should be made?
 - **Committee response:**
 - ✓ *Vertical separation is to include Type 1A and 1B soils*
 - ❖ *Must account for increased sensitivity*
 - ❖ *Must make clear what soil type is to be used when multiple soil types are located in depth of soil making up vertical separation.*
 - ✓ *Define soil type 1A as:*
 - ❖ *Very coarse sands*
 - ❖ *All extremely gravelly soils, excluding types 5 & 6*
 - ❖ *All soil material containing 90% or greater rock fragments*
 - Should soil types 1A & 1B be combined
 - **Committee response:**
 - ✓ *No*
 - ✓ *Eliminate 1B (define soil from the texture of the soil filling the interstitial spaces between the coarse fragments)*
 - ✓ *Type 1A soils will be called Type 1 soils*
 - What adjustments should be made to treatment requirements in type 1 soils?
 - **Committee response:**
 - ✓ *More frequent doses – minimum of 12 per day*
 - ✓ *Provide pretreatment prior to soil disposal*
 - ✓ *Require systems to meet a nitrogen reduction treatment standard prior to final soil discharge in nitrogen sensitive areas.*
 - What should the hydraulic loading rate for Type 1 soils be?
 - **Committee response:** *1.0 gal/ft²/day*

(The results of these committee decisions are summarized in the table located in the section on Day 2 of these minutes pertaining to discussion on treatment standards -Technical Issue #1)

3. Technical Issue 7A – Lot size (Minimum Land Area)

- Selden Hall summarized his report (See **Item 4**) with a PowerPoint presentation highlighting key factors
- Key comments during the discussion
 - There is potential conflict between stormwater collection and handling procedures and how wastewater is handled.
 - There is concern about allowing OSS on lots <12,500 ft²
 - Melanie – State groundwater standards protect all ground waters of the state, not just aquifers used for consumption.
 - Mike – with lot sizes < 1.5 acres, we will have problems with nitrates at full build-out of developments. He cited examples in Lewis Co., and in California.
 - There is concern what OSS are doing to groundwater.
 - John – some aquifers are more susceptible to contamination, including contamination by nitrogen, than others
 - Bill – suggested that nitrogen removal should be considered if existing or new lots are less than one acre in size.
 - It was recognized that changes in how the minimum lot size issue is currently handled will be difficult.
 - It was recognized that Growth Management Act is resolving many of the issues with new development.
 - **Recommendations:**
 1. Prior to approval of new subdivisions or prior to issuance of an OSS permit for an existing lot of record, where densities exceed 1 unit per acre, nitrogen removal must be addressed.
 - Motion – Bill
 - Second – Mike
 - Vote: 8 Yes 0 No
 2. In table VII for new proposed subdivisions, have gross densities of 2 units (unit volumes = 3 bedroom home) per acre for all soil types in the Public Water row.
 - Motion – Kevin
 - Second – Mike
 - Vote: 5 Yes 3 No
 3. In table VII for new proposed subdivisions, have a minimum gross density of 1 unit (unit volume) per acre for all soil types in the Individual well row.
 - Motion – Kevin
 - Second – Tom
 - Vote: 6 Yes 1 No (Pam) 1 Abstain(Melanie)
 4. Delete method 2
 5. Look at method 2 and add those sections that still should be used
 - Land area under water is not included
 - Must be sufficient area for primary and reserve areas, area to properly treat and dispose, area to minimize public health effects of contaminants on ground and surface waters.
 - Reductions are permitted where a final assessment roll or a planned unit development
 - LHD may allow proposed dedicated public roads on the boundaries of the proposed development to be included in gross area determinations.

- To do:
 - Selden
 - Check setback requirements for public wells in water supply regs
 - Develop a table indicating what various states around the US use for minimum lot sizes
 - Melanie
 - Check setback requirements for individual wells in well drilling regs.

Day 2, August 15, 2002

Dave Lenning summarized the discussion and recommendations developed during the Day 1.

4. Technical Issue #2 – Hydraulic loading rates

- John Eliasson summarized the committee recommendations to this point on this issue. He indicated that Craig Cogger and Lisa Pilazzi had reviewed the recommendations and made the following comments:
 - They agree with what is proposed
 - Lisa suggested the first footnote be changed to be more readable: “Soils ~~with a textural classification~~ having a ...”
 - Definitions for the different types of structure specified (platy, massive, weak, moderate, and strong) should be added.
- After the discussion on type 1 soils on day 1, concern was expressed during this discussion about extremely gravelly soil types 3 & 4 being called type 1 soils.
- **The committee agreed with their recommendations on the footnote and definitions.**
- Craig and Lisa will be asked to look at the committee recommendations for type 1 soil.

(The results of these committee decisions are summarized in the table located in the next section of these minutes pertaining to discussion on treatment standards (Technical Issue #1))

5. Technical Issue #1 – Treatment Standards 1 & 2 (See Item 5 for handout materials on this issue)

- Discussion on proposed treatment standards/levels
 - John Eliasson & Dave Lenning summarized the draft recommendations on proposed treatment standards developed during the June TRC meeting.
 - There was a brief discussion of Wayne Turnberg’s report on CBOD and BOD and a suggestion that CBOD be used.
 - Concerns were stated about the possible abuse of the numbers, that these were 30-day averages (30-day geometric mean for fecal coliform) and these were not appropriate for grab samples. Should a standard for grab samples be included?
 - John reminded the committee that the proposed numbers in the standards were for testing components to see if they meet a standard – thus 30-day averages were useable. They are not intended for on-going sampling to see if a component continues to meet a standard.
 - The question was asked: Does it make sense to use a performance standard as a compliance standard? A compliance standard is a set of appropriate observations and measurements that indicates a component/system is deemed to comply with performance.

- Motion by Mike Vinatieri: **In treatment standard 2, BOD₅ should be changed to CBOD₅ and that both the CBOD and TSS numbers should be consistent with NSF Standard 40 Class I. (25 mg/l CBOD₅ and 30 mg/l TSS)**
 - o Second – Kevin
 - o Vote: Yes – 8 No – 0
- Motion by Kevin Barry: **In treatment standards 1, 3 and 4, BOD₅ should be changed to CBOD₅ and the values for CBOD and TSS agreed upon at the last meeting remain the same.** During the discussion, Mark Soltman reminded the committee that the committee in the past had voted to use 8.3 CBOD as equivalent to 10 BOD. A yes vote on this motion would be a change of past decisions.
 - o Second – Mike
 - o Vote: Yes – 7 No – 0 Abstain – 1 (Melanie)
- Other recommendations made without motions and votes included:
 - o Use the term “Pretreatment Levels” rather than “Treatment Standards.”
 - o Remove the labels for each standard – “secondary”, “tertiary”, etc.
 - o Remove FOG from all pretreatment levels except for Pretreatment Level 1
 - o For the nitrogen and phosphorus “add-on” pretreatment levels, call them just “N and “P”
 - o Remove the fecal coliform standard for Pretreatment Level 2.
 - o Change the CBOD and TSS levels for Pretreatment Level 3 to 25 and 30 mg/l respectively, to be consistent with Pretreatment Level 2, but leave the proposed fecal coliform standard.
 - o The votes and recommendations are depicted in the two following tables: Table 1 – Maximum Hydraulic Loading Rates, Table 2 – Pretreatment Levels

Table 1. Maximum Hydraulic Loading Rates

Soil Type	Soil Textural Classification Description^{1,2}	CBOD₅ > 25 mg/l (Gal/ft²/day)	CBOD₅ < 25 mg/l (Gal/ft²/day)
1	Very coarse sands, all extremely gravelly soils excluding soil types 5 & 6, all soil with 90% or greater rock fragments	1.0	2.0
2	Coarse and medium sands	1.0	2.0
3	Loamy coarse sands, loamy medium sands	0.8	1.6
4	Fine sands, loamy fine sands, sandy loams, loams	0.6	1.2
5	Very fine sands, loamy very fine sands <u>OR</u> silt loams, sandy clay loams, clay loams and silty clay loams with medium or strong structure	0.4	0.8
6	Other silt loams, sandy clay loams, clay loams and silty clay loams	0.2	0.4

¹Any soil having a platy or massive structure shall not be used for installing an OSS

²Soils with expanding clays shall not be used

Table 2. Pretreatment Levels

Level	CBOD₅¹	TSS¹	FOG¹	FC²	Total N¹	Total P¹
1³	200	80	20	--	--	--
2	25	30	--	--	--	--
3	25	30	--	10 ⁴	--	--
4	10	10	--	200	--	--
N	--	--	--	--	5	--
P	--	--	--	--	--	2

¹ 30-day averages measured in mg/l

² 30-day geometric mean measured in colonies/100 ml

³ Residential septic tank effluent with an outlet filter

- Discussion on application of pretreatment levels.
 - John Eliasson reviewed current status of risk-based system for siting systems. There are only a couple of good examples
 - o John discussed “susceptibility” vs. “vulnerability.” Susceptibility includes only natural factors, while vulnerability includes both natural factors and on-site practices. The two examples from Hoover and Loomis use vulnerability. John suggests focusing on susceptibility.
 - o John discussed the approaches of Hoover and Loomis.
 - o John discussed his thoughts and concepts. He briefly described the example that he has developed.
 - o Melanie Kimsey – Has some concerns with risk-based models, especially when applying them to aquifers that not considered equal. Who will be classifying aquifers?
 - o Bill – John’s example is missing densities, which affects susceptibility. There are questions on how densities can be combined with this example.
 - o Kevin Barry – With John’s example, there is a need to be able to combine the vertical separation table (page 9 of the handout) with the table on treatment levels for resource protection areas (on page 10 of the handout).
 - o Horizontal setbacks need to be part of this.
 - o There are other factors that could/should be part of this: method of distribution, precipitation/climate, and temperature.
 - o Vertical separation really deals with pathogen reduction. Another table may be desirable to account for density, which is more nitrogen oriented. Nitrogen is of health concern, but also can serve as an indicator.
 - o Pam Denton – mentioned the possibility of developing a point-based system.
 - o Melanie Kimsey – maybe develop 3 independent tables: 1 – vertical separation, 2 – density, 3 – resource protection areas/conditions
 - o Keith Grellner – Asked if current setbacks and treatment standards are working. Do they need to be changed?
 - o Mike Vinatieri – Maybe a decision tree is needed that starts with the most important factors (in a chart or table) and going to other charts with less important factors (in a chart or table).
 - o Steve Wecker – Case must be made to the RDC as to why change is necessary.
 - o Setbacks can be part of the way of addressing density.
 - o But nitrogen is a density issue, not a setback issue.

- o We need the data showing nitrogen increases in Washington waters
- o Mark Soltman – suggested an alternative way of handling this, balancing elements of risk and protection.
- o The committee evaluated a couple situations to see which pretreatment level may be appropriate.
- **To do:**
 - o **Selden Hall – check with Dave Jennings of DOH drinking water section to see if nitrogen data are available.**
 - o **Melanie Kimsey – check with DOE/USGS to see what nitrogen data exists in groundwater reports**
 - o **DOH staff – develop one or more options for detailed discussion during the October meeting.**

6. Technical Issue #24B – Wastewater Tanks – Dave Lenning handed out a set of possible questions to answer (see **Item 6**) as decisions are made on what should be placed in rule. Dave will be evaluating national standards and standards from other states for information to assist the discussion at the October meeting.

ADMINISTRATIVE/OTHER ISSUES

1. The next meeting will be at the same location in Ellensburg on October 9-10, 2002
2. The meeting was adjourned

MEETING MATERIALS¹

Administrative/Other Materials

Meeting Agenda – August 14-15, 2002

Item #1 – Report of TRC activity to the RDC, a list of RDC member issues and current status, an updated copy of the TRC priority list of technical issues containing RDC member issues and additional TRC questions – submitted by Dave Lenning

Item #2 – Handout containing RDC questions on Technical Issue 7B (Residential Flow Rates) – submitted by Laura Benefield

Item #3 - Rule Development Committee Issue Research Report on Issue TI 6, Type 1 Soil Issues – submitted by John Eliasson

Item #4 – Rule Development Committee Issue Research Report on Issue TI 7A, Lot Size (Minimum Land Area) – submitted by Selden Hall

Item #5 – Handout containing information on treatment standards and their application –
submitted by John Eliasson & Dave Lenning

Item #6 – Questions for wastewater tanks, Technical Issue 24B – submitted by Dave Lenning

¹ All listed meeting materials are maintained by the Department of Health in a meeting manual entitled: *Technical Review Committee Meeting, August 14-15, 2002*. For further information, please contact the Department of Health's Wastewater Management Program at (360) 236-3062.